

METHOD AND APPARATUS FOR MECHANICAL AND
CHEMICAL-MECHANICAL PLANARIZATION OF
MICROELECTRONIC SUBSTRATES

ABSTRACT OF THE DISCLOSURE

A method and apparatus for mechanically and/or chemical-mechanically planarizing microelectronic substrates. In one embodiment in accordance with the principles of the present invention, a microelectronic substrate is planarized or polished on a planarizing medium having a thin film and a plurality of micro-features on the film. The film may be an incompressible sheet or web substantially impervious to a planarizing solution, and the micro-features may be configured in a selected pattern on the film to restrain fluid flow of the planarizing solution across the surface of the film under the substrate. The micro-features, for example, may be configured in a selected pattern that has a plurality of support points and at least one cavity to entrap a substantially contiguous, uniform distribution of the solution under the substrate during planarization. Additionally, the selected pattern of micro-features may be reproduced from a master pattern of micro-features to duplicate the selected pattern on several sections of film so that a consistent planarizing surface may be provided for a large number of substrates.